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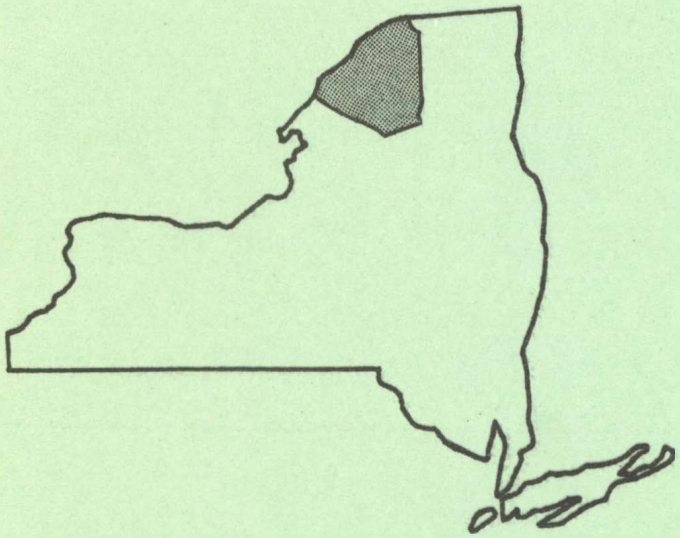
Forest Statistics for

NEW YORK

Forest District No. 7

(Revised)



Forest Statistics Series:
New York No. 17

Northeastern Forest Experiment Station

Upper Darby, Pennsylvania
Ralph W. Marquis, Director

1954

United States Department of Agriculture • Forest Service

FOREWORD

Results of the forest survey for New York Forest District No. 7 were originally published in July, 1952. Afterwards some changes were made in forest-survey definitions, and later information was obtained on public forest-land ownership and farm-woodland acreage. Because of this, the forest-survey data for Forest District No. 7 have been revised. The revised figures, contained in this report, supersede the figures contained in the earlier report.

This report is a product of the forest survey of the Northeast, carried on by the Northeastern Forest Experiment Station as part of the nationwide forest survey being made by the Forest Service, U. S. Department of Agriculture.

Similar reports have been published for the other forest districts in the State of New York. The primary purpose of these reports is to provide basic forest statistics for the administrative use of the New York Department of Conservation.

The New York Department of Conservation aided the Northeastern Station greatly in the forest survey of the State. The Department not only provided the aerial photogrpahs used in the survey, but also cooperated in many other phases of the work.

Field work in Forest District No. 7 was supervised by Harry W. Camp, Jr. The statistical procedures for obtaining field-inventory data were developed by C. Allen Bickford. Computations were made under the supervision of Roland H. Ferguson.

Ralph W. Marquis

Ralph W. Marquis
Director

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FOREST STATISTICS FOR

NEW YORK FOREST DISTRICT NO. 7

Prepared by

Division of Forest Economics

Northeastern Forest Experiment Station
Forest Service, U.S. Dept. Agriculture

GENERAL

Forest District No. 7 contains only one county, St. Lawrence--the largest in New York. It is located in the northern part of the State adjacent to the St. Lawrence River. All the land in the district drains into this river.

The northwestern half of the district is relatively flat: many dairy farms are located here. However, much of the poorer land is being abandoned. The rock substratum is near the surface and in many places fire and erosion have exposed large areas of it, destroying the land's value as pasture.

In the southeastern part of the district, the foothills of the Adirondack Mountains begin. This is a land of lakes and hills and swamps and forest.

Forest Area

The total land area in the district is 1-3/4 million acres. More than half of this is forested.

Nearly three-fourths of the forest area is concentrated in the southeastern half of the district.

About 130,000 acres, in the State Forest Preserve[1] in the southeastern part of the district, are reserved from commercial timber cutting. Another 1,000 acres of forest land are considered incapable of producing commercial timber. The remaining 892,600 acres are classed as commercial forest land.

Ownership

About 72 percent of the commercial forest land is held by industrial and other nonfarm private owners. Twenty-three percent is in farm forest lands. The remaining 5 percent is publicly owned--chiefly in State Forests.[2]

Forest Types

The principal forest type is sugar maple-beech-yellow birch. This type is found on the better-drained soils. One third of the commercial forest area is in this valuable type.

About one-fourth of the commercial forest area is covered by the aspen-gray birch type. This is a temporary type usually found on areas that have been clear-cut, burned, or abandoned for agricultural use.

Softwood types occupy about one-sixth of the commercial forest area. The most extensive softwood types are cedar-tamarack-spruce and spruce-fir. Numerous less extensive types occur on the rest of the commercial forest area. These include ash-elm-maple, spruce-fir-hardwood, hardwood-white pine, white pine, and white oak.

Forest Stands

Sawtimber stands of more than 5,000 board feet per acre are few, only 8 percent of the commercial forest area

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[1] THE STATE FOREST PRESERVE COMPRISES LAND OWNED BY THE STATE IN THE 12 FOREST PRESERVE COUNTIES IN THE ADIRONDACKS AS DEFINED BY LAW.

[2] OUTSIDE THE LIMITS OF THE ADIRONDACK AND CATSKILL PARKS AND NOT SUBJECT TO THE CONSTITUTIONAL PROHIBITION AGAINST CUTTING, WHICH APPLIES TO STATE FOREST PRESERVE LANDS.

runs to this volume. But this small area contains more than one-third of the sawtimber volume. So the remaining two-thirds is spread over more than nine-tenths of the forest area.

One-third of the commercial forest land is stocked with trees of sapling size or smaller. Some of this land has literally no stocking at all. It will be many years before these stands will be able to produce merchantable timber.

Timber Volume

There are 1½ billion board feet (International ¼-inch rule) of live sawtimber on commercial forest land in the district. More than half of this volume is in five hardwood species: sugar maple, elm, red maple, yellow birch, and beech. About one-fourth is in three softwood species: hemlock, spruce, and white pine.

The volume of primary growing stock totals 581 million cubic feet. Of this about 312 million cubic feet are in sawtimber trees and 269 million cubic feet are in pole-timber trees.

The cubic volume of primary growing stock is equivalent to 7 million rough standard cords.

Blowdown Damage

The survey was completed before the severe windstorm of November 25, 1950. The storm changed the stand-size distribution, the volume of timber, and the growing stock. While estimates of damage have been prepared from basic data provided by the New York State College of Forestry, the amount of damage has not been deducted from the accompanying tables since there is no satisfactory way of distributing the loss by forest type or species.

There are 18,600 acres of forest land on which there is some windthrown timber. Of this, about 6,300 acres are commercial forest land. The remaining 12,300 acres are in the State Forest Preserve.

Of the total blowdown area in the commercial forest land, about 4,500 acres had only a light windthrow, not enough to change the stand-size class of the stand. Heavier windthrow occurred on 1,800 acres, of which 800 acres were

in sawtimber stands and 1,000 acres in poletimber stands. Of the 800 acres in sawtimber stands, 700 acres were changed to poletimber and seedling-and-sapling stands.

There was a total loss of 7.5 million board feet of sawtimber on the commercial forest land. The volume of wind-thrown sawtimber in the sawtimber stands amounted to 6.8 million board feet. The volume in sawtimber stands is further reduced by the amount of standing timber on the 700 acres that changed from sawtimber stand-size classes to poletimber and seedling-and-sapling stands. Of the total growing stock, 2.4 million cubic feet were blown down.

NEW YORK FOREST DISTRICT NO. 7

Table 1.--Land area by major classes, 1949

Class of land[1]	Area	
	Acres	Percent
Forest land:		
Commercial	892,600	52
Noncommercial[2]	130,900	7
All forest land	1,023,500	59
Nonforest land	750,600	41
All land[3]	1,774,100	100

[1]See Appendix for definitions.

[2]Includes 129,700 acres of forest land in the State Forest Preserve reserved from timber cutting. Total area, including water, of the Preserve in this District is 163,724.97 acres, as of September 30, 1952.

[3]Census of Agriculture, 1950. Water areas of 1 to 40 acres are included in the estimate of nonforest acreage.

NEW YORK FOREST DISTRICT NO. 7

Table 2.--Commercial forest-land area by ownership, 1949

Ownership class	Acreage held	
	Acres	Percent
Private:		
Farm forest land[1]	210,500	23
Other private	633,100	72
Total private	843,600	95
Public:		
State[2]	45,400	5
County	3,200	(3/)
Municipal	400	(3/)
Total public	49,000	5
All ownerships	892,600	100

[1] Census of Agriculture, 1950.

[2] Commercial forest land administered by the New York State Conservation Department as State Forests, amounting to 45,371.59 acres, as of September 30, 1952.

[3] Less than 1 percent.

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Table 3.--Commercial forest-land area by forest type, 1949

Forest type	Area	
	Acres	Percent
Cedar-tamarack-spruce	67,200	8
Spruce-fir	41,400	5
Spruce-fir-hardwood	31,000	3
Other softwood types	20,100	2
Sugar maple-beech-yellow birch	309,900	34
Aspen-gray birch	238,400	28
Ash-elm-maple	99,000	11
Other hardwood types	85,600	9
All types	892,600	100

NEW YORK FOREST DISTRICT NO. 7

Table 4.--Commercial forest-land area by forest-type group and stand-size class, 1949

Forest-type group	Saw-timber stands	Pole-timber stands	Other stands[1]	Total area
	Acres	Acres	Acres	Acres
Softwood types	43,600	53,200	62,900	159,700
Sugar maple-beech-yellow birch	173,400	129,100	7,400	309,900
Aspen-gray birch	10,000	82,300	146,100	238,400
Other hardwood types	71,700	41,000	71,900	184,600
All types	298,700	305,600	288,300	892,600
Percent	33	34	33	100

[1]Includes 142,600 acres of seedling-and-sapling stands that are 10-39 percent stocked and 19,600 acres of forest land that are less than 10 percent stocked.

NEW YORK FOREST DISTRICT NO. 7

Table 5.--Net volume of live timber on commercial forest land by species, 1949

Species	Growing stock[1]		Saw-timber[2]
	Thousand cu.ft.	Equivalent in cords	Thousand bd.ft.
Hemlock	56,500	706,200	178,000
Spruce	52,200	652,500	113,800
White pine	23,600	295,000	103,900
Other softwoods	45,700	571,300	53,600
All softwoods	178,000	2,225,000	449,300
Sugar maple	73,900	923,800	213,900
Elm	53,800	672,500	195,900
Red maple	92,100	1,151,200	173,100
Yellow birch	43,400	542,500	168,200
Beech	45,200	565,000	149,100
Basswood	17,400	217,500	65,400
Black cherry	12,900	161,200	52,900
Aspen	44,500	556,300	34,800
Ash	14,700	183,800	22,100
Other hardwoods	4,900	61,200	15,900
All hardwoods	402,800	5,035,000	1,091,300
All species[3]	580,800	7,260,000	1,540,600

[1]Includes sawtimber. Cord equivalent in rough standard cords is assumed to average 80 cubic feet of peeled wood.

[2]Log scale, International $\frac{1}{4}$-inch rule.

[3]Excludes the net volume of cull trees--18,600,000 cubic feet.

Table 6.--Net volume of live timber on commercial forest land by diameter class, 1949

Diameter class[1] (in inches at breast height)	Growing stock	Saw-timber
	Thousand cu.ft.	Thousand bd.ft.
Softwoods:		
6	31,700	--
8	39,500	--
10	32,300	115,300
12	22,400	92,200
14	17,600	76,900
16	10,100	47,900
18	5,500	29,500
20	10,300	44,100
22	4,600	23,300
24 +	4,000	20,100
All softwoods	178,000	449,300
Hardwoods:		
6	59,400	--
8	76,300	--
10	61,500	--
12	43,300	186,700
14	41,900	211,500
16	45,900	247,800
18	26,900	151,100
20	18,400	111,200
22	7,100	43,800
24	8,800	50,200
26	10,900	71,600
28 +	2,400	17,400
All hardwoods	402,800	1,091,300
Total	580,800	1,540,600

[1]The midpoint of each 2-inch diameter class is indicated.

NEW YORK FOREST DISTRICT NO. 7

Table 7.--Net volume of live timber on commercial forest land by forest type, 1949

Forest type	Growing stock		Saw-timber
	Thousand cu.ft.	Equivalent in cords	Thousand bd.ft.
Cedar-tamarack-spruce	19,100	238,800	27,100
Spruce-fir	46,000	575,000	102,600
Spruce-fir-hardwood	32,200	398,800	93,200
Other softwood types	24,000	291,200	82,300
Sugar maple-beech-yellow birch	267,100	3,218,800	767,100
Aspen-gray birch	86,400	952,500	100,700
Ash-elm-maple	82,200	1,023,700	250,300
Other hardwood types	47,200	561,200	117,300
All types	604,200	7,260,000	1,540,600

Table 8.--Average net volume of live timber per acre of commercial forest land, by stand-size class, 1949

Stand-size class (and acreage of each class)	Growing stock	Sawtimber
	Cubic feet	Board feet
Sawtimber stands:		
More than 5,000 bd.ft. per acre (73,500 acres)	1,870	8,180
1,500 to 5,000 bd.ft. per acre (225,200 acres)	1,000	2,940
Poletimber stands:		
More than 600 cu.ft. per acre (203,300 acres)	780	860
200 to 600 cu.ft. per acre (102,300 acres)	290	390
Other[1] (288,300 acres)	100	220
Average, all classes[2] (892,600 acres)	650	1,730

[1]Includes seedling-and-sapling stands and non-stocked areas.

[2]Hardwoods constitute 66 percent of the total board-foot volume or 69 percent of the total cubic-foot volume in all stand size classes. The average cubic volume in all stand-size classes is equivalent to 8 cords per acre.

APPENDIX

DEFINITIONS OF TERMS

Forest Areas

Forest-land area.--Includes (a) lands that are at least 10 percent stocked by trees of any size and capable of producing timber or other wood products, or of exerting influence on the climate or on the water regime; (b) land from which the trees described in (a) have been removed to less than 10 percent stocking and which has not been developed for other use; and (c) afforested areas. (Forest tracts of less than 1 acre, isolated strips of timber less than 120 feet wide, and abandoned fields and pastures not yet 10 percent stocked are excluded.)

Commercial forest-land area.--Forest land that is (a) producing, or physically capable of producing, usable crops of wood (usually sawtimber), (b) economically available now or prospectively, and (c) not withdrawn from timber utilization.

Noncommercial forest-land area.--Forest land (a) withdrawn from timber utilization through statute, ordinance, or administrative order but which otherwise qualifies as commercial forest land, and (b) incapable of yielding usable wood products (usually sawtimber) because of adverse site conditions.

Forest Types

Forest types are classified according to the species or species group that accounts for the major portion of the stand in terms of cubic feet in sawtimber and poletimber stands, or the number of stems in seedling-and-sapling stands.

Stand-Size Classes

Sawtimber stands.--Stands with sawtimber trees having a minimum net volume per acre of 1,500 board feet, International $\frac{1}{4}$-inch rule.

Poletimber stands.--Stands failing to meet the sawtimber stand specification, but at least 10 percent stocked with poletimber and larger (5.0 inches and larger) trees, and with at least half the minimum stocking in poletimber trees. (Poletimber stands carry at least 200 cubic feet per acre.)

Seedling-and-sapling stands.--Stands not qualifying as either sawtimber or poletimber stands, but having at least 10 percent stocking of trees of commercial species and with at least half the minimum stocking in seedling-and-sapling trees.

Other areas.--Forest-land areas not qualifying as sawtimber, poletimber, or seedling-and-sapling stands. (Includes nonstocked areas.)

Tree Classes

Sawtimber trees.--Trees of commercial species that contain at least one merchantable sawlog as defined by regional practice and that are of the following minimum diameters at breast height (d.b.h.): Softwoods 9.0 inches and hardwoods 11.0 inches. (All butt sawlogs are considered merchantable. Where the butt is defective, upper sawlogs are considered merchantable if they account--in terms of aggregate net volume--for 50 percent or more of the gross volume below the top of the uppermost sawlog. Softwood sawlogs are at least 6.0 inches in diameter inside bark at small end; 8 to 16 feet in length; sound and straight enough to be manufactured into standard lumber. The smaller logs are generally free of surface defects other than small tight knots. Hardwood sawlogs are at least 8.0 inches in diameter inside bark at small end; 8 to 16 feet in length; suitable for sawing into standard lumber, construction timbers, or ties.)

Poletimber trees.--Trees 5.0 inches d.b.h. and larger of commercial species that do not meet the specifications for sawtimber trees but do meet regional specifications of species, soundness, and freedom from defect. (These are the trees that are straight and clear enough to make sawtimber trees eventually.)

Seedling-and-sapling trees.--Trees of commercial species less than 5.0 inches in diameter at breast height.

Cull trees.--Live trees of sawtimber or poletimber size that are unmerchantable for sawlogs now or prospectively because of defect, rot, or species.

Timber Volume

Growing stock.--Net volume, in cubic feet, of live sawtimber trees and live poletimber trees from stump to a minimum 4.0-inch top (of central stem) inside bark.

This volume is also given in rough standard cords (bark included). Cord volume is derived from growing stock by applying a factor of 80 cubic feet per cord.

Live sawtimber volume.--Net volume in board feet, International $\frac{1}{4}$-inch rule, of live sawtimber trees.

FOREST-SURVEY METHODS

These forest statistics are based on information gathered from aerial photographs and from sample plots examined on the ground.

First, photo-interpretation plots were marked off on the aerial photographs. These plots were distributed uniformly by mechanical means over photographs of the entire district. Trained photo-interpreters then classified each photo-plot as either forest or nonforest. Forest plots were classified further according to stand-size and forest type.

Field crews inspected some of the photo-plots on the ground. Enough plots were selected at random so as to attain a specified level of statistical accuracy. Species and volume data were collected on these ground plots; and the photo classification of stand size and forest type was verified or--if necessary--changed.

The survey was designed for maximum efficiency in estimating total cubic volume to meet the national standards of accuracy.

ACCURACY OF THE ESTIMATES

The estimates in this report may contain two kinds of error. First, photo-interpreters may make mistakes of judgment and fieldmen may make mistakes in measuring or record-

ing. There is no practical way of finding out just how often such errors occur. But they are kept to a minimum by closely checking all phases of the work.

The second kind of error is associated with sampling procedures. The size of this sampling error can be measured. In Forest District No. 7 the probabilities are 2 out of 3 that the actual forest area is within ± 9.4 percent of the estimated forest area, that the actual cubic-foot volume is within ± 6.5 percent of the estimated cubic-foot volume, and that the actual board-foot volume is within ± 10.1 percent of the estimated board-foot volume. This does not include any mistakes in measurement or classification.

These percentages show that the area estimates are more accurate than the volume estimates, and that the cubic-foot estimates are more accurate than the board-foot estimates.

In each of the tables, the total figures are more accurate than the subtotals. The subtotals are more accurate than any of the individual figures. Figures that are small in relation to totals are subject to larger sampling errors.

SPECIES TALLIED

The various commercial tree species tallied in New York Forest District No. 7 are listed below. Approved common names[3] are shown in parentheses if these differ from the brief name used in the tables. Other tree species may occur in the area, but unless they were tallied on the field plots they were not included in the following list.

Softwoods

Hemlock (Eastern hemlock)	- Tsuga canadensis
Spruce (Red spruce)	- Picea rubens
White pine (Eastern white pine)	- Pinus strobus
(Red pine)	- Pinus resinosa
Other softwoods	
(Balsam fir)	- Abies balsamea

[3] LITTLE, ELBERT L., JR. CHECK LIST OF NATIVE AND NATURALIZED TREES OF THE UNITED STATES (INCLUDING ALASKA). U. S. DEPT. AGR., AGR. HANDB. 41, 472 PP. 1953.

(Northern white-cedar)	- Thuja occidentalis
(Tamarack)	- Larix laricina

Hardwoods

Sugar maple	- Acer saccharum
Elm	- Ulmus species
Red maple	- Acer rubrum
Yellow birch (Yellow birch)	- Betula alleghaniensis
(Sweet birch)	- Betula lenta
Beech (American beech)	- Fagus grandifolia
Basswood (American basswood)	- Tilia americana
Black cherry	- Prunus serotina
Aspen (Bigtooth aspen)	- Populus grandidentata
White ash	- Fraxinus americana
Other hardwoods	
(Paper birch)	- Betula papyrifera
(Northern red oak)	- Quercus rubra
(White oak)	- Quercus alba
(Hickory)	- Carya species
(Black walnut)	- Juglans nigra
(Butternut)	- Juglans cinerea

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